

CLAIMS

What is claimed is:

1. A method for call admission control in a fast dynamic channel allocation wireless communication system, comprising the steps of:
 - requesting that a call be admitted;
 - obtaining measurement results;
 - generating timeslot sequences by determining a figure of merit for each timeslot;
 - determining a code set;
 - assigning a code set to a timeslot sequence, wherein each successful assignment is considered to be a solution;
 - selecting the solution having the lowest weighted total interference signal code power (ISCP);
 - allocating codes for the selected solution;
 - recording the physical resource allocation information; and
 - responding to the call admission request.
2. The method according to claim 1, wherein the obtaining step includes collecting input parameters from the call admission request;
- gathering measurement results from a Node B and a wireless transmit/receive unit using the communication system;
- retrieving a list of available timeslots; and
- calculating the data rate.
3. The method according to claim 2, wherein the determining step is based upon the calculated data rate.
4. The method according to claim 1, wherein the figure of merit is a representation of the assignment quality of the timeslot.

5. The method according to claim 1, wherein the assigning step includes selecting a code and a timeslot;
determining whether the code is available from the code vector of the selected timeslot;
evaluating whether the code can be supported in the selected timeslot; and recording the code allocation information.
6. The method according to claim 5, wherein the selecting step includes selecting a spreading factor from the code set;
examining a code in the selected spreading factor; and selecting a timeslot from the timeslot sequence.
7. The method according to claim 5, wherein the evaluating step includes determining whether the selected code satisfies the constraints of the wireless transmit/receive unit; and
estimating the noise rise and the code transmission power that would result if the selected code is added to the selected timeslot.
8. The method according to claim 5, wherein the recording step includes updating the ISCP value.
9. The method according to claim 5, further comprising the step of recording the weighted ISCP value once a solution is found.
10. The method according to claim 5, wherein the steps are performed for each timeslot in the timeslot sequence.
11. The method according to claim 10, wherein the steps are performed for each code in the spreading factor.

12. The method according to claim 11, wherein the steps are performed for each spreading factor in the code set.

13. The method according to claim 1, wherein the allocating step includes updating the code tree.

14. The method according to claim 1, wherein the recording step includes storing the information in a centralized radio resource management information database.

15. A system for call admission control in a fast dynamic channel allocation wireless communication system, comprising:

a wireless transmit/receive unit (WTRU), comprising:

a resource signal receiver;

a measurement device, for taking WTRU-specific measurements; and

a measurement signaling device, for signaling the measurements to the wireless communication system;

a Node B, comprising:

a resource allocation device;

a resource signaling device, for signaling resource allocations to said resource signal receiver; and

a measurement collection device, for collecting measurements from said measurement signaling device; and

a radio network controller, comprising:

a memory, for storing WTRU data and cell data received from said measurement collection device; and

a radio resource management (RRM) device, said RRM device accessing said memory to make call admission control decisions, said RRM device directing said resource allocation device to allocate resources to admit a call.